

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#28

In re Application of

Date: July 23, 2003

STEPHEN F. GASS

Serial No. : 09/676,190

Examiner Boyer D. Ashley

Filed : September 29, 2000

Group Art Unit 3724

For : SAFETY SYSTEMS FOR  
POWER EQUIPMENT

COPY

Commissioner for Patents  
Attention: Examiner Boyer D. Ashley  
Group Art Unit 3724  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

**DECLARATION OF STEPHEN F. GASS**

I, Stephen F. Gass, declare as follows:

1. I am the named inventor in the above-identified application.
2. The claims currently pending in the above-identified application describe a saw or woodworking machine having a detection system to detect a dangerous condition or contact between a person and a blade, and a brake system to urge the blade away from a work surface or to limit the movement of the blade into a work zone. Urging the blade away from the work surface, or limiting the movement of the blade into the work zone, reduces the potential for a serious injury when a person contacts the blade.
3. In an Office Action mailed June 3, 2003, the Examiner rejected all claims in the above-identified application under 35 U.S.C. §103(a) in light of U.S. Patent

No. 5,285,708 to Boston et al. combined with U.S. Patent No. 3,785,230 to Lokey. The Examiner asserts that the combination of Bosten and Lokey would result in a saw with a brake that would urge the blade away from a work zone. I am filing this declaration to traverse that rejection and to submit evidence that the combination of the Bosten and Lokey patents would not function as stated by the Examiner.

4. My educational background is in physics. In 1986 I earned a Bachelor of Science degree in physics from Oregon State University, and graduated summa cum laude. In 1990 I was awarded a Ph.D. degree in physics from the University of California San Diego.

5. The Bosten patent discloses a miter saw. A blade 36 is shown in Fig. 1 of Bosten, and the blade spins counterclockwise as seen in that figure. The blade is mounted on a support arm 28 that is pivotally connected to a support 24 by a coupling 30. As shown in Fig. 1, support arm 28 pivots counterclockwise around coupling 30 to move the blade toward a work surface 18 to cut a workpiece thereon. However, Bosten fails to show or suggest any detection or brake system.

6. Lokey discloses an "automatic safety brake" with a proximity sensor to try and detect when a person approaches the blade, and a cam brake to stop the blade. Lokey does not discuss urging a blade away from a work zone.

7. The Examiner says it would have been obvious to use the automatic safety brake of Lokey on the miter saw shown in Bosten. However, if Bosten was modified to include Lokey's safety brake, the result would be to generate a force tending to urge the

blade *toward* the work surface, not away from it. That is the opposite of what is claimed in the above-identified application.

8. Specifically, if the safety brake of Lokey were installed on upper guard 48 in the Bosten miter saw, and if the brake tried to stop blade 36 from spinning, then the angular momentum of the spinning blade would be transferred to support arm 28 and the support arm would try to spin in the same direction as the blade due to conservation of angular momentum. Specifically, the angular momentum of the blade would be transferred to support arm 28 through the brake. The support arm would then try to spin in the same direction as the blade, and would move down toward work surface 18 because that is the only movement it can make that is in the same direction as the blade was spinning. The support arm would move down regardless of whether Lokey's brake was positioned at the front or back of the blade.

9. I have actually built and tested miter saws similar in construction to the one shown in Bosten with brake systems mounted adjacent the blade. In each test, the blade would move toward the work surface of the miter saw with significant force when the brake engaged the blade. These tests confirm that if a brake system as shown in Lokey were installed on a miter saw as shown in Bosten, then the blade would move toward the work surface of the miter saw - not away from it.

10. I have built several saws that are constructed as required by the claims currently pending in the above-identified application. Those saws have been recognized with the following awards:

- **Chairman's Commendation.** In July 2001, the U.S. Consumer Product Safety Commission reviewed and tested one of the saws. As a result of that review, then-Chairman Ann Brown awarded the saw a Chairman's Commendation for significant contributions to product safety. Only a handful of products have ever won that award. That award was reported nationally on CNN Headline News on July 21 and 22, 2001.

- **Challenger's Award.** At the International Woodworking Fair 2000, in Atlanta, Georgia, saws constructed as required by the currently pending claims won the Challenger's Award, which is the woodworking industry's highest honor. It recognizes the most innovative and technically advanced improvements to woodworking equipment.

- **Popular Science – One of the 100 Best New Innovations.** The magazine *Popular Science* identified the saws as one of the 100 best new innovations of 2002.

- **Workbench Magazine – One of the Top 10 Tools for 2003.** *Workbench* magazine included the saws on its list of the top 10 innovative tools for 2003.

- **Woodwork Institute of California Endorsement.** The Woodwork Institute of California has endorsed saws constructed as required by the pending claims, stating:

As a Trade Association in the construction industry (representing over 250 manufacturers of architectural millwork with an excess of 4,000 employees, all of whom use saws of one type or another) we find your SawStop technology and its potential of eliminating or reducing worker injury of extreme significance. Generally, we would not endorse a commercial product; however the potential benefit to our members and their employees of implementing the SawStop technology on the tools used within our industry overrides such. (Letter dated 11/30/00 from Stanley R. Gustafson, CEO/Secretary, Woodwork Institute of California, to Stephen Gass.)

- Editor's Choice Award, Tools of the Trade. The magazine *Tools of the Trade* awarded its 2001 Editor's Choice Award to the saws in recognition of the significance of the new technology.

11. The saws I have built have also been the subject of extensive media coverage, including national coverage by CNN Headline News, by the television program NEXT@CNN, by the Associated Press, and by Paul Harvey on the ABC Radio Network. Numerous magazines around the world have published reports about the saws and said the saws were "revolutionary," "unique" and "ingenious." The media has specifically mentioned the feature of moving a blade away from a work surface. Examples of quotes from magazines are set forth below (the media typically refers to the saws by the name "SawStop"):

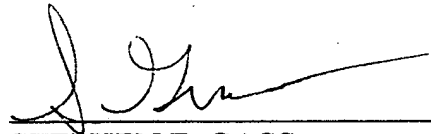
- "SawStop: A revolutionary safety device," *FDM*, December 2000, p. 88.
- "This magazine will never endorse a material or machine. We're here to provide an objective report on technologies that are used by secondary plastics processors. Having said that, I was floored by an invention I saw at the recent International Woodworking Fair," *Plastics Machining & Fabricating*, September 2000, p. 58.
- "Revolutionary SawStop May Change the Woodshop,"
- "the next revolutionary safety device," *Woodshop News*, January 2002, p. T30.
- "unique blade brake," and "The torque of the sudden stop pulls the blade downward into the saw ...," *Wood*, March 2001, pp. 14, 16.

- “The ingenious device ...” and “When called into use, the SawStop activates a spring that pulls the saw blade down into a replaceable plastic block ...,” *Wood & Wood Products*, October 2000, p. 58.
- “[T]he blade’s inertia causes the arbor to drop, bringing the blade below the table. Instead of a serious injury, or perhaps even amputation, a minor cut is the only result,” *Woodshop News*, November 2000, p. T17.

12. The U.S. Consumer Product Safety Commission studied a saw constructed as required by the pending claims, and issued a memorandum dated July 19, 2001 reporting the study. The feature of a blade moving away from a work surface was specifically mentioned in the report as follows: “A typical SawStop reaction to contact with a hot dog resulted in almost immediate retraction of the blade and cessation of the blade rotation within 4 milliseconds. Time for the blade to retract below the surface of the table saw depends on the blade height set for the cut. An important factor is the fact that however long it takes for the blade to stop rotating, the hazardous cutting edge of the blade is already moving away from the contact point.”

13. I hereby declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Date: July 23, 2003



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STEPHEN F. GASS